

What is claimed is:

1. A device for monitoring around a vehicle capable of detecting objects present around said vehicle based on an image captured by at least one infrared camera member
5 provided with said vehicle, said device comprising:
 - a pedestrian's head area calculating unit which establishes an area which is supposed to correspond to a head of said pedestrian as a reference area;
 - a pedestrian's over-shoulder area calculating unit which establishes two object areas which are supposed to correspond to over-shoulder areas of said pedestrian on both
10 sides of said reference area;
 - a pedestrian's shape acknowledging unit which acknowledging said pedestrian who is in said captured image according to a feature in a luminance in said reference areas and a feature in a luminance in said object areas.
- 15 2. A device for monitoring around a vehicle according to Claim 1 wherein said object areas are offset upwardly from said reference area.
3. A device for monitoring around a vehicle according to Claim 1 further comprising a pedestrian's shoulder area calculating unit which establishes another object area for
20 acknowledging pedestrian's arms and shoulders downwardly to said object areas respectively wherein said pedestrian's shape acknowledging unit acknowledge said pedestrian in said captured image according to a feature in a luminance in said object areas and other object areas.

4. A device for monitoring around a vehicle capable of detecting objects present around said vehicle by extracting an object based on an image captured by at least one infrared camera member provided with said vehicle so as to acknowledge the object as a pedestrian, said device comprising:

5 a pedestrian's head area calculating unit which establishes an area which is supposed to correspond to a head of said pedestrian as a reference area;

a pedestrian's over-shoulder area calculating unit which establishes two object areas which are supposed to correspond to over-shoulder areas of said pedestrian on both sides of said reference area;

10 a pedestrian's shape acknowledging unit which acknowledging said pedestrian who is in said captured image according to a feature in a luminance in said reference areas and a feature in a luminance in said object areas, and

a display device which displays an object which is acknowledged as a pedestrian by the pedestrian's shape acknowledging unit distinguishably from the object which is not
15 acknowledged as a pedestrian.

5. A device for monitoring around a vehicle capable of detecting objects present around said vehicle by extracting an object based on an image captured by at least one infrared camera member provided with said vehicle so as to acknowledge the object as a
20 pedestrian, said device comprising:

a pedestrian's head area calculating unit which establishes an area which is supposed to correspond to a head of said pedestrian as a reference area;

a pedestrian's over-shoulder area calculating unit which establishes two object areas which are supposed to correspond to over-shoulder areas of said pedestrian on both

sides of said reference area;

a pedestrian's shape acknowledging unit which acknowledging said pedestrian who is in said captured image according to a feature in a luminance in said reference areas and a feature in a luminance in said object areas,

5 an alarm determination device which determines whether or not an alarm should be generated to the object which is acknowledged as a pedestrian by the pedestrian's shape acknowledging unit, and

a display device which displays an object which is acknowledged as a pedestrian by the pedestrian's shape acknowledging unit distinguishably from the object which is not
10 acknowledged as a pedestrian.

6. A device for monitoring around a vehicle according to Claim 4 or 5 wherein the object area is offset upwardly with reference to the reference area.

15 7. A device for monitoring around a vehicle according to Claim 4 or 5 further comprising a pedestrian's shoulder area calculating unit which establishes another object area for acknowledging pedestrian's arms and shoulders downwardly to said object areas respectively wherein said pedestrian's shape acknowledging unit acknowledge said pedestrian in said captured image according to a feature in a luminance in said object areas
20 and other object areas.

8. A device for monitoring around a vehicle according to Claim 4 or 5 wherein the said display device displays the object distinguishably in an emphasized manner which is acknowledged as a pedestrian by the pedestrian's shape acknowledging unit.

9. A device for monitoring around a vehicle according to Claim 3 wherein said a feature in said luminance is specified according to an average luminance, a luminance contrast, a relativity error value between said object areas and other object areas.